The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JILL MCFADDEN, EARL BARDSLEY, AND ROBERT GARABEDIAN

Appeal 2007-2282
Application 09/097,023
Technology Center 3700

Decided: September 19, 2007

Before TONI R. SCHEINER, LORA M. GREEN, and RICHARD M. LEBOVITZ, *Administrative Patent Judges*.

LEBOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This a decision on appeal from the final rejection of claims 1-15, 17-22, 24-42, 44-48, 50, 53-56, 58, 59, and 61-63. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

STATEMENT OF CASE

The claims are directed to catheter section comprising an elongate tubular member comprising a knit tubular member and an inner tubular liner. "Catheters are increasingly used to access remote regions of the human body and, in doing so, delivering diagnostic or therapeutic agents to those sites" (Spec. 1: 14-15).

> Often the target which one desires to access by catheter is within a soft tissue such as the liver or the brain. These are difficult sites to reach. The catheter must be introduced through a large artery . . . and then be passed through ever-narrower regions of the arterial system until the catheter reaches the selected site. Often such pathways will wind back upon themselves in a multi-looped path. These catheters . . . must be fairly stiff at their proximal end so to allow the pushing and manipulation of the catheter as it progresses through the body, and yet must be sufficiently flexible at the distal end to allow passage of the catheter tip through the loops and increasingly smaller blood vessels.

(Spec. 1: 24-33.)

> The invention utilizes the concept of combining one or polymeric tubes with a knit tube. The construction technique has the benefit of producing catheter sections having small overall diameters but with exceptional strength, resistance to ovalization and kinking, and recovery from kinking.

(Spec. 2: 21-24.)

Claims 1-15, 17-22, 24-42, 44-48, 50, 51, 52, 53-56, 58, 59, and 61-63 are pending (Br. 5). Claims 1-15, 17-22, 24-42, 44-48, 50, 53-56, 58, 59, and 61-63 are appealed; claims 51 and 52 were stated by the Examiner to be allowable if rewritten in independent form (Br. 5).

The following rejections are on appeal:

1) Claims 1, 2, 13, 19, 20, 24, 31, 40, 46, 47, 50, 53, 54, 55, 56, 58, and 59 stand rejected under 35 U.S.C. § 102(b) as anticipated by Suzuki (JP5-220225-A, published Aug. 31, 1993, as translated into English[1]) (Answer 3);

2) Claims 1-5, 13, 14, 18, 19, 20, 24-27, 31-33, 40, 41, 45, 46, 47, 50, 53-56, 58, and 59 stand rejected under 35 U.S.C. § 102(e) as anticipated by Leoni (U.S. Pat. No. 5,772,681, issued June 30, 1998 and having a § 102(e) date of Oct. 30, 1995) (Answer 3);

3) Claims 1, 8-10, 13, 15, 18-21, 31, 36-38, 40, 42, 45-48, 50, 53-56, 58, 59, 61, and 63 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook (U.S. Pat. No. 4,637,396, issued Jan. 20, 1987) in view of Cox (U.S. Pat. No. 5,257,974, issued Nov. 2, 1993) (Answer 3);

4) Claims 2-7, 11, 12, 14, 24-30, 32-35, 39, 41, and 62 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook in view of Cox, and further in view of Leoni (Answer 4);

5) Claims 6-12, 15, 21, 28-30, 34-39, 42, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Suzuki or Leoni, and further in view of Anderson (U.S. Pat. No. 5,674,276, issued Oct. 7, 1997) (Answer 4);

6) Claims 17, 22, 44, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Suzuki or Leoni in view of Jang (U.S. Pat. No. 4,898,591, issued Feb. 6, 1990) (Answer 4); and

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[1] Two English translations of Suzuki have been provided: 1) a "machine-assisted translation" which appears in Appendix B of the Answer; and 2) a computer translation provided by the Japan Patent Office and in Appendix C of the Answer. All references to Suzuki are with respect to the translation in Appendix B, unless stated otherwise.

7) Claims 17, 22, 44, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook, Cox, and Jang (Answer 4).

THE CLAIMS

Appellants argue the claims in each rejection as a group and do not provide separate reasons for patentability for any individual claim within the groups. Consequently, the claims stand or fall together in each grouping.[2] We select claims 1, 2, 10, and 17 as representative claims for the purpose of deciding all issues in this appeal. Claims 1, 2, 10, and 17 (and 54 upon which claim 17 depends) read as follows:

> 1. A catheter section comprising an elongate tubular member having a proximal end, a distal end, and a passageway defining a lumen extending between the proximal and distal ends, said elongate tubular member comprising a knit tubular member and an inner tubular liner in coaxial relationship with the knit tubular member, wherein the knit tubular member is formed from a plurality of interlocking up loops and down loops and is generally not radially expandable.
>
> 2. The catheter section of claim 1 wherein the knit tubular member comprises a metal alloy.

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[2] "For each ground of rejection applying to two or more claims, the claims may be argued separately or as a group. When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(vii)(year).

> 10. The catheter section of claim 1 wherein the knit tubular member comprises a multifilament wire.
>
> 54. The catheter of claim 1 further comprising an outer tubular cover extending over the knit tubular member.
>
> 17. The catheter section of claim 54 wherein the outer tubular cover comprises a material selected from the group consisting of polyimide, polyamide, polyethylene, polypropylene, polyvinylchloride, fluoropolymers including PTFE, FEP, Nylon, polyether block amide, vinylidene fluoride, and their mixtures, alloys, copolymers, and block copolymers.

Claim 1, which we select as representative of the independent claims, is directed to a catheter section having: 1) a knit tubular member and 2) an inner tubular member. The knit tube tubular member is 3) "formed from a plurality of interlocking up loops and down loops" and 4) "is generally not radially expandable."

At issue in this appeal is the meaning of the phrase "knit tubular member." According to Appellants, the term "knit" has several meanings: (1) "to tie together", (2) "to link firmly or closely", and (3) "to form by interlacing . . . in a series of connected loops with needles" (Br. 18). The Specification does not contain a definition, but it states that the knit tubular member "is preferably knitted from a single [wire] strand and configured with the 'down loops' and 'up loops' having the same size" (Spec. 8: 9-10). Thus, in one preferred embodiment the knit member is produced by interlacing loops of a single wire strand; that is, definition (3).

However, it is improper read limitations from the Specification into the claims. *See Sjolund v. Musland*, 847 F.2d 1573, 1581, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988); *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d

1057, 1059 (Fed. Cir. 1993). Claim 1 is not restricted to a knit tubular member produced by interlacing loops from a single wire strand. Thus, we interpret the knit tubular member more broadly to cover tubular members made by tying, linking, or interlacing (see definitions (1)-(3) *supra*) one or more strands, but with the requirement that it is "formed from a plurality of interlocking up loops and down loops" and "is generally not radially expandable" as recited in claim 1.

The knit tubular member is also required by claim 1 to be "generally not radially expandable." The only guidance we can find in the Specification as to the meaning of this phrase is that the knit member is characterized as "preferably tightly knitted so that it is not significantly radially expandable (e.g., does not increase in diameter more than about 5%" when an outwardly directed radial force is applied to an inner surface of the knit member" (Spec. 8: 17-20). Claim terms are interpreted broadly during patent prosecution with a meaning that is consistent with the Specification. With this as a guiding principle, we interpret the phrase "generally not radially expandable" to mean that knit member can expand when a radial force is applied to it, but not significantly, e.g., not more than about a 5% increase in diameter.

DISCUSSION

Rejections over Suzuki

Claims 1, 2, 13, 19, 20, 24, 31, 40, 46, 47, 50, 53, 54, 55, 56, 58, and 59 stand rejected under 35 U.S.C. § 102(b) as anticipated by Suzuki.

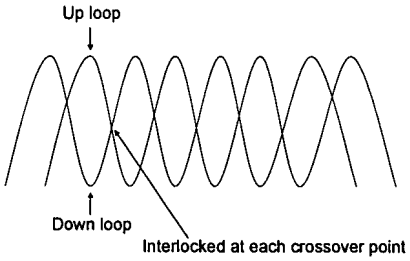
Analysis

The Examiner finds that Suzuki describes a catheter comprising a knitted reinforcement layer 35 comprising interlocking up and down loops as recited in claim 1 (Answer 5). The Examiner further finds that Suzuki's knitted later is "generally not radially expandable because there is resistan[ce] to expansion due to the interlocking loops. [Suzuki] describes a densely knitted member that has great torsional rigidity (See translations claim 1 and paragraphs 0003). This structural arrangement would inherently result in being generally not radially expandable" (Answer 5-6), meeting the corresponding limitation of claim 1.

Appellants contend that Suzuki shows "the wires [in the reinforcement layer] in a woven or crisscross pattern," but not in "interlocking up and down loops, as is recited in the instant claims" (Br. 16). Appellants argue that Suzuki describes "a woven or braided member wherein the wires are wrapped in a helical fashion" (Br. 16) and does not use the term "knit" to mean that the reinforcement layer comprises loops as recited in the claimed invention (*see* Br. 16). Appellants also contend that "at no point has the Examiner identified where [Suzuki] teaches a knit member which is generally not radially expandable" (Br. 16).

We agree with the Examiner that claim 1 is anticipated by Suzuki. With respect to the "knit" limitation, we concur with Appellants that Suzuki's knit tubular member is "a woven or braided member wherein the wires are wrapped in a helical fashion" (Br. 16). It is clear from the description in both English translations of Suzuki that the knit structure is produced by wrapping or twisting the wires in a crisscross pattern (Suzuki,

at p. 14 [0019] referring to "meshes of a net are formed alternatively"; Answer 6). However, we find that when Suzuki's reinforcement layer is formed by this wrapping process, interlocking up and down loops are produced. Depicted below is a figure based on Suzuki's description of two crisscrossed wires produced by braiding, showing the up and down loops and the crossover point where the loops interlock.



The figure above shows interlocking up and down loops – as required by the corresponding limitation of claim 1.

Claim 1 also states that the knit tubular member "is generally not radially expandable." Suzuki is silent as to whether the described flexible catheter is able to expand radially. However, Suzuki characterizes the knit reinforcement layer as comprised of *densely* knitted and *roughly* knitted sections (Suzuki, pp. 4 [Claim 1]; Answer 6). The skilled worker would have recognized that the looseness of the knit would determine the ability of the catheter to expand.[3] Appellants' own Specification states that a tight knit is preferred "so that [the knit member] is not significantly radially expandable" (Spec. 8: 17-18). In our opinion, because Suzuki's reinforcement layer has the same structure as the claimed knit member, the Examiner reasonably presumed that the *densely* knitted catheter section of Suzuki would inherently be "not generally radially expandable." This

[3] See, e.g., Cook, col. 3, ll. 42-45 (FF 10).

conclusion is consistent with Suzuki's characterization of its catheter as being designed to twist and turn as it is guided through blood vessels (Suzuki, at p. 6 [0003]), rather than being used as a balloon stent which would necessarily be expandable to accommodate its use in opening constricted vessel passageways.

"[A]fter the PTO establishes a prima facie case of anticipation based on inherency, the burden shifts to appellant to 'prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.' *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (CCPA 1971)." *In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed. Cir. 1986). Appellants have not provided adequate evidence or arguments to rebut the Examiner's reasonable presumption.

We affirm the rejection of claim 1 over Suzuki. Claims 2, 13, 19, 20, 24, 31, 40, 46, 47, 50, 53, 54, 55, 56, 58, and 59 fall with claim 1 because separate arguments for their patentability were not provided.

Leoni

Claims 1-5, 13, 14, 18, 19, 20, 24-27, 31-33, 40, 41, 45, 46, 47, 50, 53-56, 58, and 59 stand rejected under 35 U.S.C. § 102(e) as anticipated by Leoni.

Findings of Fact

1. Leoni describes a dilation catheter having a "middle section comprising an inner elastic tube, a reinforcement net made of metallic monofilaments surrounding the inner tube and an outer elastic tube surrounding the reinforcement net" (Leoni, col. 1, ll. 31-34).

2. "[T]he parts of said middle section situated outside the balloon section being predominantly unexpandable or expandable to a lesser degree than the balloon section (Leoni, col. 1, ll. 34-36; Final Rejection 3)

3. "The middle section of the dilation catheter . . . may comprise a non-expandable part of greater length than the balloon section" (Leoni, col. 3, 18-20).

4. The inner tube is reinforced with metallic monofilaments which can be "either helically wound, knitted or braided to form a reinforcement net 2" (Leoni, col. 4, ll. 10-15; *see* also, col. 1, ll. 37-38).

5. The "mesh rows" of the reinforcement net are "are movable with respect to each other in the crossover points 5 with and without internal pressure, i.e., during expansion of the balloon section" (Leoni, col. 3, ll. 58-62).

Analysis

The Examiner contends that Leoni describes a catheter which meets all the limitations of claim 1, including of a catheter having a knitted section which is "formed from a plurality of interlocking up loops and down loops and is generally not radially expandable" recited in claim 1. Appellants contend that Leoni does not describe a knitted tube member having the claimed properties (Br. 20-21).

The issue in this rejection is whether the Examiner erred in finding that Leoni describes a "knit tube member is formed from a plurality of interlocking up loops and down loops and [which] is generally not radially expandable" as recited in claim 1.

It is our opinion that the Examiner did not err in his findings. Leoni explicitly states that the middle section of its catheter can comprise a reinforcement net which can be "knitted" (FF 4). The term "knit" means "to form by interlacing . . . in a series of connected loops with needles" (Br. 18). Thus, persons of ordinary skill in the art would recognize that a "knitted" reinforcement net would comprise "interlocking up loops and down loops" as consequence of being formed by the process of knitting. Leoni explicitly states that the middle section comprising the reinforcement net can be "non-expandable" (FF 2, 3), and thus meets the other requirement of claim 1 that the knit tubular member is "generally not expandable."

Appellants contend that the term "knit" has several meanings, including (1) "to tie together", (2) "to link firmly or closely", and (3) "to form by interlacing . . . in a series of connected loops with needles" (Br. 18). Appellants argue that Leoni uses the term "knit" with the meaning of (1) or (2), but not to mean that the reinforcement net comprises loops (see Br. 21). To support this argument, Appellants argue that "Leoni teaches a reinforcing net made of metallic monofilaments wherein the contact points of the mesh rows are moveable with respect to each other in the crossover points. See Leoni, column 3, lines 55-60 . . . The crossover points are not points of interlocking loops as currently claimed, but are points wherein the mesh rows are moveable with respect to each other" (Br. 21).

We do not find this argument persuasive. The section of the reinforcement net referred to by Appellants (Leoni, col. 3, ll. 55-61) is the part which expands when the balloon is engaged (Leoni, col. 3, ll. 52-62; FF 5), not the part which is characterized as "non-expandable." Leoni describes

the crossover points as "movable" because they would need to move with respect to each other in order to expand the diameter of the reinforcement net.

We also do not agree that "crossover points" would not be present in a knit reinforcement net as argued by Appellants (Br. 21). Loops of a metallic filament produced by knitting would necessarily have crossover points where the strand of one loop is linked to another by interlacing it. The strand of one loop crosses over the strand of another loop as they are interlaced together, i.e., a crossover point. Thus, we are not convinced by Appellants' argument that a reinforcement net having crossover points would not be characteristic of a knitted configuration.

Finally, we note Leoni explicitly discloses that the knit tubular member can be knitted (FF 4). Thus, even if the embodiment describing crossover points (FF 5) does not meet the claimed limitation of "interlocking up loops and down loops," the knitted member satisfies this limitation.

For the foregoing reasons, we affirm the rejection of claim 1. Claims 2-5, 13, 14, 18, 19, 20, 24-27, 31-33, 40, 41, 45, 46, 47, 50, 53-56, 58, and 59 fall with claim 1 because separate arguments for their patentability were not provided.

Leoni or Suzuki and Anderson

Claims 6-12, 15, 21, 28-30, 34-39, 42, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Suzuki or Leoni and further in view of Anderson. We have selected claim 10 as representative which recites that the "knit tubular member comprises a multifilament wire."

The Examiner contends:

> [Suzuki] or Leoni disclose[s] the claimed invention except for using multifilaments with first and second materials of a metal and a polymer. Andersen teaches using multifilaments with first and second materials of a metal and a polymer to give desired characteristics to the knitted material for making tubular medical devices where the tube has a knitted member between an inner liner and outer cover (1:50 - 2:46, 4:32-43, 6:5-43, 8:2-7). . . . It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Andersen in the invention of [Suzuki] or Leoni in order to tailor the tubular device with different properties to achieve different functions (6:54-58).

(Final Rejection 4.)

Appellants contend that "[t]he [expandable] stent graft taught in Anderson et al. is nonanalogous to the catheter shaft taught in either [Suzuki] or the dilation balloon taught in Leoni . . . [and] the nature of the problem to be solved in Anderson et al. is dissimilar to that of either [Suzuki] or Leoni" (Br. 28).

In our opinion, the Examiner has the better argument. While we recognize that Anderson's stent is expandable, we do not find that either Suzuki or Leoni is "nonanalogous" to the dilation balloon described in Leoni. As stated in *In re Clay*, 966 F.2d 656, 658-59, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992), the two criteria for evaluating whether a reference is sufficiently analogous to the invention are "(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." In this case, we find that Anderson is in the same

field of endeavor as Suzuki and Leoni. Anderson describes a tubular medical prosthesis for use in an arterial blood vessel lumen (Anderson, col. 2, ll. 28-32). The devices are useful to maintain the opening of a blood vessel which has been constricted by plaque (Anderson, col. 1, ll. 17-20). Suzuki's catheter (Suzuki, 7 [0006]) and Leoni's dilation catheter (Leoni, col. 3, l. 8) are also for use in blood vessels. Thus, it is logical that the skilled worker would have considered Anderson's teachings pertinent to Suzuki or Leoni because they are in the same general field of endeavor – medical devices which are inserted into blood vessels.

In regard to Appellants' argument that Anderson's "tubular stent graft is self-expanding or otherwise readily expandable" (Br. 27), we note that Leoni's device also has non-expandable portions (FF 2, 3) and thus the skilled worker would not be disinclined to look at Anderson.

Thus, we affirm the rejection of claim 10. Separate arguments for patentability were not provided for claims 6-9, 11, 12, 15, 21, 28-30, 34-29, 42, and 48; thus, these claims fall with claim 10.

Suzuki or Leoni and Jang

Claims 17, 22, 44, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Suzuki or Leoni and Jang.

The Examiner contends that "[Suzuki or Leoni] disclose the claimed invention except for the materials of construction of the inner and outer liner and cover respectively. Jang teaches the use of polyethylene as an inner liner and outer cover of a reinforced catheter to provide desired mechanical properties. It would have been obvious to one of ordinary skill in the art at

the time of the invention to use the teachings of Jang in . . . [Suzuki] or Leoni in order to achieve the desired flexibility, torsion and column rigidity for the catheter" (Final Rejection 5).

It is the Examiner's burden to establish prima facie obviousness. *See In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Obviousness requires a suggestion of all the elements in a claim (*CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342, 68 USPQ2d 1940, 1947 (Fed. Cir. 2003)) and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007). Here, we find that the Examiner has identified the elements of claim 17, and provided a reason that would have prompted the skilled worker to have combined them to reach the claimed invention.

Appellants argue that Jang does not teach a knitted member, but the Examiner did not rely on Jang for this teaching (Br. 28). Appellants identify no other defect in the Examiner's reasoning, and we find none. We affirm the rejection of claim 17. Claims 22, 44, and 48 fall with claim 17 because separate reasons for their patentability were not provided.

Rejections over Cook and Cox

Claims 1, 8-10, 13, 15, 18-21, 31, 36-38, 40, 42, 45-48, 50, 53-56, 58, 59, 61, and 63 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook in view of Cox.

Claims 2-7, 11, 12, 14, 24-30, 32-35, 39, 41, and 62 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook in view of Cox, and further in view of Leoni.

Claims 17, 22, 44, and 48 stand rejected under 35 U.S.C. § 103(a) as obvious over Cook, Cox, and Jang.

Findings of Fact

Cook

6. Cook teaches a balloon catheter having an inner layer, a middle layer and an outer layer (Cook, col. 2, ll. 38-45).

7. The middle layer is a knitted fabric tube (Cook, col. 2, ll. 41).

8. "One advantage of a balloon reinforced with a knitted fabric over prior known fabric reinforced balloons is in the expansion and contraction characteristics. . . . [A] balloon reinforced with the knitted fabric tube described herein is capable of expanding three-dimensionally such that an increase in diameter does not require a decrease in length of the balloon" (Cook, col. 3, ll. 46-55)

9. The balloon expands to a predetermined maximum diameter (Cook, col. 3, ll. 31-34).

10. "It is to be understood that the ratio of maximum to minimum diameter of balloon 12 is determined primarily by how loosely middle layer 23 is originally knitted" (Cook, col. 3, ll. 42-45).

Cox

11. Cox describes an intravascular balloon stent that comprises a balloon and a hollow member.

12. The hollow member can be "made of a noncompliant material that envelopes the balloon. Upon inflation of the balloon, the hollow member serves to restrict the balloon's radial size, enhance its strength and increase the dilatation force applied to the stenosis. . . . Finally, the hollow member is able to decrease the size of the balloon in the event the balloon is too large for the artery requiring treatment" (Cox, col. 3, ll. 28-37).

Analysis

The Examiner contends:

> Cook discloses that the catheter section is made so that it only expands to a predetermined diameter. Cook does not describe what predetermined diameters are selected. Cox teaches a multi-layered catheter that is made for predetermined expansion of less than 2.7% so the catheter could be used safely in intravascular procedures. (col. 3, lines 27-36; col. 25, lines 28-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Cox in the catheter of Cook in order to protect a patient during intravascular procedures.

(Final Rejection 3.)

It is the Examiner's burden to establish prima facie obviousness by showing all the elements of the claimed invention and a reason to have combined them. *See In re Rijckaert*, 9 F.3d at 1532, 28 USPQ2d at 1956; *CFMT,* 349 F.3d at 1342, 68 USPQ2d at 1947; *KSR*, 127 S. Ct. at 1741, 82 USPQ2d at 1396.

In this case, there is insufficient evidence to establish that a person of ordinary skill in the art would have had reason to combine Cook with Cox. As argued by Appellants (Br. 24), Cook teaches an advantage of a knitted fabric is its ability to expand and contract (FF 8). Cox, however, describes the use of a hollow member made of noncompliant material to restrict the

expansion of the balloon (FF 12). Thus, the skilled worker would not have had reason to use the expandable material of Cook in Cox's device because Cox's device is constructed so as not to expand, or to expand only minimally. Consequently, we reverse this rejection of claims 1, 8-10, 13, 15, 18-21, 31, 36-38, 40, 42, 45-48, 50, 53-56, 58, 59, 61, and 63 as obvious over Cook in view of Cox. We also reverse the rejection of claims 2-7, 11, 12, 14, 24-30, 32-35, 39, 41, and 62 as obvious over Cook in view of Cox, and further in view of Leoni, and claims 17, 22, 44, and 48 as obvious over Cook, Cox, and Jang because each of these rejections depend upon the propriety of the combination of Cook and Cox.

CONCLUSION

The rejections of claims 1-15, 17-22, 24-42, 44-48, 50, 53-56, 58, and 59 are affirmed.

OTHER ISSUES

Upon return of this application to the Examiner, we encourage the Examiner to reconsider the patentability of claims 61-63 because it would appear that the limitation of "wherein the up loops and down loops are the same size" recited in these claims is disclosed or suggested in Suzuki or Leoni alone or in combination with other prior art, including Anderson and Cook.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN PART

KIS

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